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THE RACES OF ENGLAND AND WALES.

H. J. FLEURE, D.Sc.

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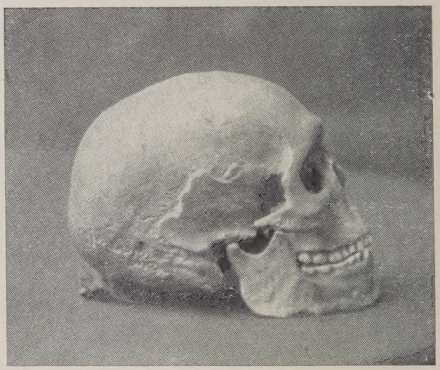

PHOTOGRAPHS OF THE RECONSTRUCTION OF THE COMBE CAPELLE SKULL (see pp. 27, 29, 76)

[*Frontispiece*

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THE RACES OF ENGLAND AND WALES

A SURVEY OF RECENT RESEARCH

BY

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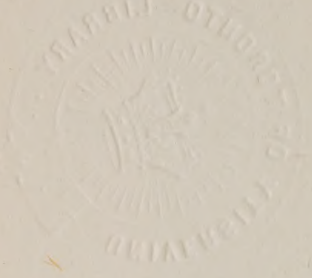

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THE RACES OF ENGLAND AND WALES

A SUMMARY OF THE MAIN CONCLUSIONS OF RECENT RESEARCH

In order to mark a fresh advance in our knowledge of this subject, it would be necessary to survey carefully not only the peoples of Europe as they exist to-day, but also the skeletal and other vestiges of the inhabitants of Europe since the Ice Age. The problems of migration and replacement which are involved need for their solution researches into the changes of climate stage by stage, from that of the bitter cold near the ice-sheets of the glacial epoch to that of the open steppe lands with a still bitter winter and occasional returns of the ice, and thence to the estab-

lishment of the present climate. This advent of the present climate [1] helped forests of oak and ash to spread over great areas in Britain and Europe, restricting the areas of settlement of the then inhabitants, who had no good tools with which to cut ways through the forest. Later on, however, opportunities of mixed farming were opened up to the peoples who from prehistoric times onwards have been engaged in clearing those forests and developing our Western European civilisation, characterised by its agricultural villages and its market towns, and, in recent centuries, by its capital cities and its immense industrial centres.

The reader will find in another small book [2] a general sketch of this process, so there is no need to give it again here, or even to apply it in detail to Britain. The fuller treatment above suggested awaits completion of studies still in progress.

[1] Brooks, C. E. P., "Evolution of Climate." (1922.)
[2] Fleure, H. J., "The Peoples of Europe." (1922.)

Research is making it ever more probable that some part of Asia, perhaps West Central Asia, was of immense importance in connection with the early evolution of mankind, and it is also highly probable that while Europe had extensive ice-sheets, the climate régime of winter rains and summer drought, which now governs the conditions of life in the Mediterranean region, then affected the Sahara, making parts of it open grasslands on which men lived and around the water-holes of which they gathered.[1]

However this may be, it is clear that Britain was literally at the edge of the world of those days, a remote spot wherein ancient ways and ancient types of man would survive. The consequences of this simple fact are of great importance for the study of race-types in Britain.

[1] For details and references see "Early Neanthropic Types and their Modern Representatives," H. J. Fleure, *Journ. Roy. Anthr. Inst.*, 1920.

For the serious study of race-history those characters[1] are of special value which can be distinguished in the skeleton, as we naturally know nothing about skin and hair characters for prehistoric man save by risky analogy from modern men. Of the parts of the skeleton it is, on the whole, the skull which gives the best indications of race, and we are able to compare skulls of ancient man with heads of living men in more detail than we could the bones of the limbs. The skull has therefore been subjected to careful measurement in many ways and a very few points must be mentioned here. The length (glabello-occipital), greatest breadth, and total height (basi-bregmatic height) of the skull are the measurements most generally considered of the first importance, and as the absolute measurements depend to some extent upon whether the person is well grown or not, healthy or not, special

[1] For details see "Notes and Queries on Anthropology." (Publ. Roy. Anthr. Inst., London.)

importance, perhaps too much importance, has been given to the relationship of these measurements one to another. The proportion which the maximum breadth bears to the length is expressed as a percentage, and this is called the cephalic index. In most samples of adult men in Britain it works out at figures between 68 and 86, with very occasional individuals beyond these limits; very few women have this index under 70, and among them the index ranges up to 90 or beyond. The length of the female head usually runs lower than that of the male.[1] The indices of children change during growth in ways that are now being made the subject of detailed study,[2] and arguments from measurements of children are therefore subject to reservations, which have not

[1] See Parsons, F. G., *Journ. Anat.* liv, 1919; Fleure, H. J., "Geog. Dist. Anthr. Types in Wales," *J.R.A.I.*, 1916; Fleming, R. M., "Sex and Growth Features," *Man*, June 1922.

[2] Fleming, R. M., *op. cit.*

always been stated by those who have used them.[1]

When the cephalic index for a skull is under 75, that skull is said to be dolichocephalic or long-headed, and an index of 75 on the skull corresponds to an index of 77, or perhaps more exactly 76·5, or so on the living head, the skin and muscles, etc., of which modify the skull measurements.

For the skin, etc., about the same arithmetical addition has to be made to both length and breadth, so that the proportional increase is greater for the small dimension, i.e. the cephalic index is thus higher for the living head than for the skull.

When the cephalic index for a skull is over 80, that skull is said to be brachycephalic or broad-headed, while skulls with indices under about 71 or above 85–

[1] This is a weak point in "Changes in Bodily Form of the Descendants of Immigrants into U.S.A.," F. Boas.

86 are said to be hyperdolichocephalic or hyperbrachycephalic respectively. It is well to remember, however, that these groupings are purely artificial, and that in any reasonably large modern British sample the individual skulls will give values almost from one end of the series to the other, and the numbers for different indices will be so distributed as to suggest the complexity of the sample. The importance of study of individual heads rather than of averages of numbers of measurements may be illustrated by taking a possible sample in which occur one man of cephalic index 68, two at 75, five at 77, two at 92. If averaged, they are described as ten men of average index 78·7, which not only misleads because no member of the group is near 78·7, but gives the idea of a group on the high side of 78, whereas it is a group on the low side with two strays of extreme broad-headed type.

The height of the skull is studied in its

relation to both length and breadth. For our present purpose it will suffice to explain that in some skulls, especially very long ones (hyperdolichocephalic), the height is often about as great as the breadth, and the skull is then called hypsistenocephalic (high-narrow-headed). In those very high skulls the middle line from front to back often stands out almost as a ridge, but this keeling of the skull also occurs in skulls which are not very high.

The (bizygomatic) measurement across the cheekbones and the measurement across from one angle (gonion) of the lower jaw to the other (bigonal breadth) as well as the measurement of the nose and the orbit (eye-socket) are also important, but many others are taken for special purposes. These give indications of the features of the face, and it is probable that these features may ultimately be considered almost more important than those of the head for purposes of race-analysis. The description of individual features is often

as important as their measurement, and this is the case especially with the eyebrows, which, as is well known, are very much more prominent in some types than in others, and are rarely strongly developed in women.

Between the two brows there is a ridge above the root of the nose which is called the glabella; it is strongly marked in certain ancient skulls and in a few individuals in modern times. Some types have the arms long and sometimes the trunk long in proportion to the legs, and, though many other factors besides race inheritance go to the determination of stature, the total height is nevertheless a fairly important fact for race-analysis.

For living persons, colour and character of skin, hair and eyes, details of the fleshy part of the ears, of the nostrils, and so on, need to be noted by the student of race, and from special characters of this kind, which are very commonly associated with certain types of skull, we can sometimes

venture to guess what the colouring of ancient types known from skulls, and other bones only, may have been.

It is necessary, however, to remember that if we had a complete list of the breeds that have contributed to our population we could not say of each individual that he belongs to one or other. In many cases he inherits various characters separately from the various breeds which have intermingled in his ancestry. In other words, we are nearly all mosaics of inheritance from our varied ancestry. In some characters our inheritance seems to be blended, while in other parts of our inheritance characters are handed on with a considerable constancy. Of course, if we consider such a complex character as "stature" statistically, we get the appearance of blended inheritance; but it is likely that could we but analyse out the myriad constituents of stature, and separate out also environmental influences, we should get far other results. If, then,

a character is often simply handed on from one or other parent, we have the notion of the persistence of characters, generation after generation, for ages, and of the persistence of groups of associated characters with, it would seem, tendencies to lesser or greater development of some of them. Thus in course of time the balance of development may slowly change, and yet in the main a group of characters distinguishing a type or breed may be handed on for an indefinite time, in spite of intermarriage with people of other inheritance. This view has been made possible by the development of the Mendelian view of inheritance, but it should also be borne in mind that the dominance or otherwise of a character in inheritance may be affected by external conditions.[1]

In strict truth, therefore, when we speak of race-types in Britain, we are not thinking of breeds, which have kept separate

[1] Tower, W. C., *Biol. Bulletin*, Vol. XVIII, 1910, p. 288, "Determination of Dominance."

since they evolved in the far-distant past. We are really thinking of groups of associated characters, which are frequently handed in one lot together from one generation to another. They may remain or reappear in after-ages to give us evidence of elements which long ago entered into the mixture which is continually re-sorting and re-mixing as the generations pass. Moreover, the process of modification probably goes steadily on, and one seems to note changes in the facial form (cheek-bones, jaws, nose, changes following palatal regression), possibly correlated with improvements in cooking in the early mediaeval period.

If these biological points be borne in mind, the reader will at once be put on his guard against the common political statements about the Latin race, Teutonic race, Anglo-Saxon race, Celtic race, and the like. The term Latin is a useful one for labelling the peoples with certain associations of civilisation in common,

and the like is true of the other terms, though these terms tend to emphasise the differences in civilisation between them, and make us lose sight of that much larger part of their civilisation which all inherit in common. But if such terms are held to imply difference of breed and origin, they become fatally misleading. Not only as between English and Irish, or English and Welsh, but as between English and French, or English and German, there has, further, been enough intermarriage in our country in recent centuries, and especially the last eighty years, to suggest care and reserve in discussions of origins and breeds, especially among the wealthier elements of the population.

Partly through the continuous handing on of characters, partly through movements of populations, which have skimmed off again various newer elements in the physique of the British people, there can be little doubt that a large part of the physical inheritance of a great proportion

of the present population of the country is derived from its pre-Roman inhabitants, who were already of many breeds established side by side. Newcomers have been grafted on the stock from time to time, but the stock has been potent all the while, and one suspects that some of the incomers have drifted off again, e.g. in the nineteenth-century emigration to the new lands.

Broadly, therefore, the populations of England and of Wales, for example, include much the same elements, but they are present in rather different proportions in the two cases, the older elements being more dominant in Wales than in England generally, albeit in certain parts of England like Dartmoor, Romney Marsh, the Chiltern Hundreds, the Black Country, the Pennines, and the Brandon district of East Anglia, the old stocks are abundant enough.

It is one of the difficult tasks of the student of races to try to combine his

results with those argued from the study of implements and other labour-products left behind by early man, because from the distribution of archaeological remains it is often possible to infer the period and direction of human movements. In such arguments, however, it is necessary to distinguish cautiously between movements of peoples and drifts of culture with perhaps very little change of the location of peoples.

In the Old Stone Age (Palaeolithic Age) man was dependent upon wood and chipped stone (especially flint and chert), and he was, in Europe at least, still without pottery or domestic animals, and almost as certainly without cultivated crops. He was, therefore, a hunter, and many attempts have been made to argue out his mode of life by analogy with hunting peoples of recent times, so long as they remained untouched by industrialism. This may be suggestive and profitable,[1] pro-

[1] See Sollas, W. J., "Ancient Hunters." (1915.)

vided it be remembered that the hunters of the Old Stone Age were in some parts distinctly on the upgrade, whereas the hunting peoples with whom Europeans have come into contact in Australia and America in recent centuries have been in most cases survivors in remote refuges probably on the downgrade. The important point for our present argument is that a population dependent upon hunting must be a sparse one, a few thousands for England and Wales. It must be trained to endure hardness; there is little time for what we call the "tender years." Milk as an article of diet is merely the mother's milk; no domestic animals provide a supplement to extend babyhood. Without pots, cookery is rough, and with the need for following prey from place to place there is often little enough time for the cooking or other softening of food. The young child must therefore learn quickly to deal with rough harsh food, to tear flesh with its teeth, even to find

for itself and gather roots and the like if it is left behind or gets astray. Heavy infant mortality and doubtless also social customs [1] kept the population from increasing overmuch, while the rigidity of conditions settled fairly definitely the physical character of the people.

Almost all the skulls of the Old Stone Age found in Europe belong to the class of *long heads*, though right at the end broad heads appear even in Portugal, thereby suggesting that there were already some of them in Europe at least a little earlier. But though the population was long-headed, it was not all of one type, and while we have little enough information about the earlier part of the Old Stone Age, we do know that in the later part there were well-contrasted types living more or less contemporaneously in Western Europe. The earlier parts of the Old Stone Age are grouped together

[1] Carr-Saunders, A. M., "The Population Problem." (1922.)

as the Palaeanthropic Period, and it is widely believed that this was the long period of the dominance of the ice over Europe, with at least one long milder interval. The later parts of the Old Stone Age are the beginning of the Neanthropic Period, the period during which, with some set-backs, Europe was recovering from the dominance of the ice. De Geer and Peake have estimated that the Palaeanthropic Period, of unknown but enormous length, graded into the Neanthropic about 12000 B.C.

The men of Palaeanthropic times, so far as we know, were not of breeds which survive at the present time, and reference should be made to special books for details as to their characteristics.[1]

With the retreat of the ice from North-western Europe at the dawn of Nean-

[1] Osborn, H. F., "Men of the Old Stone Age" (1918); Boule, M., "Les Hommes Fossiles" (1921); Keith, A., "Antiquity of Man" (1915); Giuffrida-Ruggeri, V., "Su l'origine dell' Uomo" (from which a bibliography may be compiled) (1921).

thropic time it seems that people spread northwards from Africa across what is now the strait between Sicily and Tunis, but was then land, as well as across what has become the Straits of Gibraltar. They may also have spread in from Western Asia. Spreading over such a wide area from such various directions in such a sparsely peopled region, they would naturally be of varied type, but we should expect in most some special provision for the maintenance, attachment, and working of strong jaw-muscles from an early age. In some cases this is provided by the occurrence of a large area of attachment of jaw-muscle on each side of the prominent and firmly joined median line ridged along the skull. The skull is then high, ridged, and steep-sided. The large jaw-muscles passing down in considerable proportion within the cheekbones have pushed these out so that they are usually very prominent, and this is true both of the types with markedly ridged and long

skulls (hypsistenocephalic) and of the others with flatter-topped heads. With these characters are associated a considerable breadth of the nose and rather low broad (microseme) orbits (eye-sockets with a small measurement up and down and a great one from side to side), and either—

(*a*) Strongly marked glabella (see p. 15) and brow-ridges and moderately projecting upper jaw,

Or (*b*) weak glabella and brow-ridges, but very strongly projecting upper jaw.

This last stock (*b*), with high-ridged, long, narrow skull, strong cheekbones, low broad orbits, very broad nose, weak brow-ridges, strongly projecting upper jaw, is best known from skulls of the early Neanthropic Period found in the lower layers of cave-earth on the Riviera. They are known as the Grimaldi "lower-layer" skulls, and a point of special interest concerning them is that a like type is well represented in the modern population

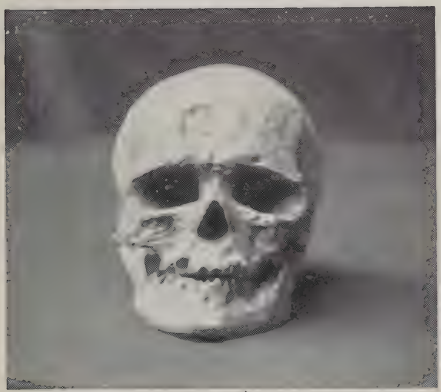
ANTERIOR VIEW OF THE BRÜNN SKULL
(see p. 27)

of several Mediterranean towns (the slum-quarters), and of the remoter districts here and there, such as certain spots in Algeria, in Sardinia, and in North Portugal (Tras os Montes). In its survivors it has dark curly hair, dark eyes, and rather dark skin. The stock (*a*) with high-ridged, long, narrow skull, strong cheekbones, low broad orbits, broad nose, strong brow-ridges, receding forehead, moderately projecting upper jaw, is probably best known from survivors in the modern population, but it occurs with some variations in skulls of various periods. Of skulls of the early Neanthropic Period, which approximate to this type, one may mention those from Brünn, and Brüx in Czechoslovakia, and a somewhat older one from Combe Capelle in France, though there is some dispute about the reconstruction of this last. This stock is well represented in the skulls of the transitional period to the New Stone Age, especially in a number of ancient skulls of somewhat doubtful date from

Britain.[1] Stature seems to have been rather below the average than above. Modern survivors are of average height and dark colouring, with hair wavy or lank in many cases.

In addition to these hypsistenocephalic (long-high-headed) types there is another named from the famous burial of early Neanthropic date at Cro-Magnon in France. Of this type unfortunately we have very few examples indeed, though the very general use of the name as a designation for all early Neanthropic long-heads would lead one to think otherwise. Apart from the skulls at Cro-Magnon, the only contemporaneous skull of that type is one from the Riviera, but some of the Cro-Magnon characters are found in skulls from other parts, most of whose inheritance is apparently from the stocks previously mentioned. The Cro-Magnon skull belonged to a tall old man, it was moderately

[1] See works quoted in last reference and also Fleure, H. J., *op. cit.*, *J.R.A.I.*, 1920.



PHOTOGRAPHS OF THE CRO-MAGNON SKULL (pp. 28–29)

long-headed, but the height of the head was much less than the breadth, the brows were moderate, the nose long and narrow, the cheekbones very strong, and the jaws powerful, the face as a whole relatively shorter than in the other stocks just mentioned. As the identification of this type in modern populations, especially in Britain, is still subject to considerable doubt, it is better not to adventure anything concerning coloration, hair, and eyes. The Cro-Magnon type then falls out of this discussion henceforth, save for a passing reference here and there, but the other two types need to be remembered and studied with some care. It seems best to make bold and call one the Combe Capelle, the other the Grimaldi type, despite the trouble about the actual Combe Capelle skull.

Comparing these skulls with the few that survive from earlier epochs, we note that, generally speaking, their cubic content is greater, and very probably shows a longer period of growth. But it has

been mainly growth in length, for the median line must needs be firm and the suture along that median line (the junction between the two sides of the skull) must therefore soon get firm, especially in the frontal region, leaving growth as a possibility chiefly along the suture (coronal suture) that goes across from side to side. The firmness of the median line is needed because the jaw-muscles must be strong, and must do hard work even in the early years of life (see p. 25).

It is characteristic of these types that they are known from skulls of several periods from early Neanthropic times to the present day, but another indication of their antiquity is that they occur far and wide at the present day, not only in Western and North-western Europe, but also (with different associated characters) in various parts of Africa, South India, the Malay Archipelago, Australia, the Pacific, and also various parts of America.[1] As it is

[1] Fleure, H. J., *op. cit.*, *J.R.A.I.*, 1920, pp. 16–18.

usually held that the stock originated somewhere in Western or South-western Asia, and almost certainly still survives there, a long period must be allowed for its spread to the ends of the earth in all directions, and its partial displacement by the other stocks almost everywhere save in the fringing lands just mentioned.[1]

The later part of Palaeolithic time has been called above the beginning of the Neanthropic Age, because in it these surviving types became an important element of the population, and the Neanthropic Age may be said to cover all the subsequent periods down to the present day. Towards the end of Palaeolithic time the remaining ice-sheets definitely diminished; the land sank around the shores of Europe; the English Channel, Irish Sea, and North Sea became the silver sea around Britain, and the westerly rain-bearing winds adopted

[1] For arguments as to distributional spreads of allied kind see Willis, J. C., "Age and Area." (1922.)

their present track, spreading into Europe across Britain and the Baltic. The climate was thus mildened and, with rain at every season of the year, the forest spread in Europe at the expense of the old grasslands. Old forms of life retreated and the reindeer disappeared from the west, and was replaced by red-deer and other species. The hunters of the ancient grasslands found their movements restricted and their opportunities lessened, and while some appear to have lingered on as shore-dwellers, feeding on shellfish and the like, a new scheme of life came into being in Europe, a scheme to which the name of Neolithic civilisation is provisionally given.

The final diminution of the ice-sheets opened up to some extent the mountain lands of the central and south-eastern parts of Europe. And what little evidence we have goes to show that they became peopled by broad-headed men, spreading in all probability from Asia Minor west-

wards.[1] They seem to have developed or acquired smoother and more wedge-shaped tools, fitter to cut down trees than the old rough flints. From Swiss evidence we gather that quite early they began to cultivate corn, and soon also to tame animals, and so to get a milk supply. With diminished success of old hunting methods on the vanishing grasslands and increasing dominance of the forest, movement was restrained, and women were hard put to it to find food for their children. But, as Myres has pointed out,[2] they came to move less and to seek out new food-supplies; they put down the babes they had carried of old, and began to make a home and collect food and fuel, now far more abundant, of course. Once the first problems of the new scheme began to be less formidable, a new set of opportunities was opened up, milk and softened food,

[1] Ripley, W. Z., "The Races of Europe" (1900); Myres, J. L., "The Alpine Race in Europe," *Geogr. Journ.*, 1906, II.

[2] Myres, J. L., "Dawn of History," chap. i. (1911.)

grain [1] as much as or more than meat, was available; there was a little more chance for the "tender years." The increase of opportunities for child-protection is probably a most potent factor of physical as well as of mental and moral improvement of breed, and this point should be emphasised in discussions of proposals for legislation for continuation—education, physical training, garden cities, and so forth. The skull might now grow more freely at most of the sutures, and from that time onwards in many parts of Europe the ridging of the skull becomes less marked, the growth is less marked lengthwise and rather more marked crosswise. In consequence of this the average long-head becomes more moderate in his measurements. Whereas previously several had a (glabello-occipital) length (for an adult male) of well over 200 millimetres on the skull, the length of later skulls is often nearer 190, unless the whole skull is very big. The breadth

[1] Keller, F., "Lake Dwellings of Switzerland." (1866.)

keeps to its old figure, or goes a little beyond, as the cephalic index (see p. 11) tends to rise from the neighbourhood of 68–70 to that of 73–75. The extreme development of the brow-ridges becomes rarer, the nose loses width, and the cheekbones project out less; the forward projection of the upper jaw also diminishes. In other words, we note a general moderating and smoothing of outline, bringing with it a number of connected changes, and leading on to still further changes in later times. It might be truer to speak of these changes as the loss of features, such as the great growth of eyebrows and so on, which had formerly marked the late stages of development. We thus have a glimpse of evolution of type brought about in correlation with change in the circumstances of the final stages of the process of growth.

Recently, the Bristol Spelæological Society [1] has found and investigated some

[1] Fawcett, E., "Human Materials, Aveline's Hole," *Univ. Bristol Spel. Soc.*, Vol. I, No. 2, p. 79. (1921.)

skulls, probably female, from Aveline's Hole, Burrington Combe. These skulls are long and high, the height being nearly equal to the width, the orbits are low and broad (microseme), like those of the long-high-skulled people already discussed, the nose appears to be fairly broad. The cheek-bones are very strong; the lower jaw had to be reconstructed, and one is uncertain as to its features, but it seems to have been less short and massive than the Cro-Magnon jaw.

On the whole, it seems best to describe the individuals of Aveline's Hole as in the general lineage of the long-high-skulled people of later Palaeolithic time, and the probable early Neolithic ("river-bed") people of Britain. The finds are dated about the end of the Palaeolithic Period in Britain.

Not only corn-growing and the keeping of milch kine and sheep, but also the use of wedge-shaped stone axes, as well as home-crafts like the making of pots and

of woven stuffs, appear to have spread over Europe in course of time, apparently regardless of differences of race, from the centre out to the fringes. This view of the spread of Neolithic fashions is, at any rate, the one that has seemed most likely, but accumulation of evidence from Spain or elsewhere might easily change our views. The general theory is probably best grounded in so far as it concerns the smooth wedge-shaped stone axes.

From the skulls ascribed to the late Palaeolithic or the earlier part of the Neolithic Age in Britain,[1] it is fair to assume that the old type of features, the high skull and the strong brows, persisted to a considerable extent among us, even if modified, and it is also noteworthy that very little of the physique of the broad-headed types is found in Britain until the

[1] See discussion in Fleure, H. J., "Early Neanthropic Types," *J.R.A.I.*, 1920, based especially upon the well-known work of T. H. Huxley in "Prehistoric Remains of Caithness" (1866).

end of the Stone Age. In spite, therefore, of later movements and invasions, the foundation of the British population was, and is, long-headed, with a fairly large element that is very old-established in the country, and has undergone changes more or less parallel to those undergone by the long-heads of the Continent, but not quite so marked. Though broad-headed elements may have become a more important part of our population than statistics have as yet shown them to be, it is nevertheless a marked distinction between the British and several of the Continental peoples (French, Belgians, Germans, etc.) that broad-headed strains are much less prevalent amongst us. It is an open question whether immigrations at various times may not have given us a larger element of this kind for a while.

The earlier part of the Neolithic Age is the mystery period of our prehistoric record. The stone implements which may belong to it may in many cases be much

younger, as types are wont to persist, especially in remote corners, such as was Britain; indeed, flints and other stone implements found in Britain may belong to any age between the Palaeolithic and the Norman. The amount of definitely early Neolithic pottery known from Britain is small; there is little difference in plants or animals between Neolithic times and now. We are thus hindered in our quest at every turn, but at any rate we note the abundant scattering of some implements of "Neolithic" type all over the land in those parts which were not encumbered with forest, and we may be allowed to suppose that some are of "Neolithic" date.

When we come to the latter part of the Neolithic Period, evidences of men's movements become far more abundant and complex. From finds in Britain and West Europe and their probable relation to finds in South-east Europe and Egypt, it has been possible to date these movements pro-

visionally within the third millennium B.C. In studying them, as already in noting the spread of wedge-shaped, smoothed stone axes, it is important to discriminate between "race-movements" and "culture-spreads."

The evidence concerning spreads, whether of race or culture, to Britain in the later Neolithic Period may be studied under two chief headings: (1) the Great Stone Monuments, (2) the Earlier Round Barrows.

The Great Stone Monuments [1] are a most striking feature of the early story of Western Europe from Spain to the Baltic, and they also occur in North Africa, Malta, Otranto, Sardinia, and Corsica. Their absence from the Aegean and Egyptian regions is a subject on which much could be said, but it would hardly connect itself with race-study *per se*. Beyond the Eastern Mediterranean, the monuments occur in Syria, in the Caucasus, in Arabia,

[1] Perry, W. J., "Geogr. Distr. of Megalithic Monuments and Ancient Mines," *Mem. Proc. Manchester Lit. and Phil.*, Vol. LX, 1915, No. 1; Fleure, H. J., *op. cit.*

in India, in Indonesia, and parts of the Pacific. It has been suggested [1] that they were built under the influence of traders and colonists from the East Mediterranean, and, in conversation, that their earliest prototypes might be Mesopotamian clay structures naturally replaced by stone, wherever such was available. On the other hand, it has been strongly urged that the Iberian Peninsula [2] has examples of most types of these monuments, and that the monuments elsewhere are more or less derivatives; on that view, however, their wide occurrence from Syria eastwards would raise a difficult problem.

There is now an increasing tendency to emphasise differences of type among these monuments, and to ascertain the distributions and relations of the various types. In Britain one of the most important

[1] Elliot Smith, G., "Origin of the Dolmen," Vol. XIII, 1913, No. 105.

[2] Leeds, E. T., "The Dolmens and Megalithic Tombs of Spain and Portugal," *Arch.*, LXX, 1920.

kinds of monument is the Long Barrow,[1] characteristic of the wood-free lands of South England, with examples showing a spread to East Anglia and Yorkshire and some modified examples in Scotland. These Barrows are possibly related to dolmen-cairns, as they are sometimes called, of the South-west English and the Welsh coast, and they occur in Man and in Arran as well as in Ireland. That they are related to both "Barrows" and *allées couvertes* of Guernsey, Brittany, and a belt eastward across France, there seems little doubt, and their relation, as well as that of their finds, to some in South Scandinavia is also fairly clear. We thus seem to have evidence of a "culture-province" stretching with local differences from South Sweden to Brittany via Britain.

In addition to the Long Barrow we have the cromlech or dolmen (cromlech is the term used rurally in Britain, dolmen is

[1] Crawford, O.G.S., "Notes on Archaeological Information, O.S. Maps," Part I, 1922.

the term used by Continental archaeologists). These occur chiefly in West Cornwall and in certain parts of Wales, so far as Britain is concerned, but they are very abundant in many parts of Ireland, and are most characteristic of all in Southern France along the southern border of the Central Plateau, besides being found, as well as the *allée couverte*, in Brittany. Without going further into this question of archaeology, we thus see that it is possible to differentiate various types of great stone monuments with varying and to some extent overlapping distributions, and it is probable that further study will reveal the existence of intermediate types.[1] Speaking very provisionally, it may be suggested that this is, in so far, evidence for a spread of culture, variously assimilated in different regions, rather than a migration of a very numerous megalith-building people. The apparent occurrence of different culture provinces in

[1] Vulliamy, C. E., *Man*, Vol. XXII, No. 1, 1922.

different parts of Britain is an interesting point, especially as one (that of the Long Barrows) suggests northern connections, while that of the dolmens suggests southern ones. Was Britain already at that early time a region whither men and manners drifted both across the North Sea from North-west Europe and across the Channel from Gaul? It seems probable that the provinces of distribution of the monuments are somehow related to trade intercourse, for we have indications of links between Brittany, Cornwall, Wales, and Ireland, at any rate for the Early Bronze Age.[1] It is necessary to emphasise that the habit of putting up great stone monuments probable continued, like that of using flints, for a long time, and the survival of local cults of these monuments under modified forms, even at this day, is well known. Of the great stone monuments, the standing stones and stone circles have a wider distribution in West Britain than

[1] Coffey, G., "The Bronze Age in Ireland." (1913.)

the dolmens, and there are many hints of a later date, especially for some of the circles. We must also not too easily argue from absence of metal finds that monuments belong to the days before metal—that is one of many pitfalls set for the archaeologists.

The dolmens of Britain have yielded few finds of skulls or human bones, but several have been unearthed from the Long Barrows, and "Long Barrow Man" has been carefully studied by Davis & Thurnam [1] and by Parsons. The skulls found, as one would expect, are long, giving an index that usually lies between 70 and 75. In some, like the Uley skull, the median line is strikingly emphasised much as in the older skulls discussed above. The brow-ridges are also often strongly marked. The nose is, however, usually narrow, though the orbit is often broad and low, as in the old types. On the whole, a survey of the skulls from the Long Barrows and

[1] Davis & Thurnam, "Crania Britannica." (1865.)

related monuments suggests a people of the old type, with ridges slightly less marked and skull somewhat more rounded. It should, however, be noted that if the Long Barrow people were immigrants of the Late Neolithic Age from the North-west of Europe, they might well have these same characters. Our present point is merely to urge that these skulls give us little indication of definite migrations, which may or may not have occurred so far as they are concerned. However this may be decided with added knowledge, we at least see that the Long Barrow people, whether new immigrants or not, maintained or emphasised the types already existing in the country.

A study of Gaul in Neolithic[1] times brings out the importance of broad heads at that age in France, and the same would probably be found true, had we adequate data, for what may broadly be called

[1] Salmon, P., "Dénombrement des cranes néolithiques de la Gaule."

Central Europe. There is, therefore, a contrast between Britain and the Continent in that, up till quite late Neolithic time, broad heads do not seem to have been numerous in the former, if they were present at all. This is doubtless important in connection with what was said above about the long-headed character of the British population to this day.

The researches of J. R. Mortimer[1] and of Canon Greenwell[2] into the burial-mounds of Northern England, and those of the Scottish archaeologists as well, together with the work of Lord Abercromby[3] on early pottery, have revealed many details of the advent, towards the close of Neolithic time, of immigrants from across the North Sea. The pottery which forms part of the grave-furniture has been used as a means of identification,

[1] Mortimer, J. R., "Forty Years' Researches in the Burial Mounds of East Yorks."

[2] Greenwell & Rolleston, "British Barrows." (1877.)

[3] Abercromby, Lord, "Bronze Age Pottery." (1912.)

and, in the earlier stages of their culture in Britain, one of the most characteristic features is the so-called "Beaker" pot. On the basis of studies by H. J. E. Peake[1] and Sir A. Keith[2] and the valuable map of Vidal de la Blache,[3] it has been suggested that these people moved westwards from the Kief region, or at any rate from Upper Silesia, along the more or less tree-free belts of loess and limestone, branching southward at various points. They reached Denmark and probably the Low Countries. In Britain their remains are most characteristic along the east coast from Caithness to the Humber, but they seem also to have penetrated along the Chalk southward in East Anglia, and up from the Dorset coast and Christchurch towards

[1] Peake, H. J. E., "Racial Elements in the First Siege of Troy," *J.R.A.I.*, XLVI, 1916.

[2] Keith, A., "Bronze Age Invaders of Britain," *J.R.A.I.*, XLVI, 1915.

[3] Vidal de la Blache, Map in "Tableau de la Géographie de la France" (Vol. I of Lavisse, "Histoire de France").

Salisbury Plain.[1] A few occur near the Thames and along the coasts of East Anglia, and it is possible that Wilts and Dorset were reached from East Anglia by progress along the chalk lines of open country. A catalogue of finds of their pottery in Wales has just been issued,[2] and shows that they did reach that country, though their occupation was sparse and indeed may not be much more than a culture drift. From the east coast they penetrated westward both in Scotland and to the Pennines, and important collections of their remains have been made in the Peak District. Only one group of pots accepted as "Beakers" is known from Ireland (Sligo). The Beaker, related to and derived from the "Becher" known to German archaeologists, gave place to the

[1] Crawford, O. G. S., "Early Bronze Age Settlements in Britain," gives a good account and map, *Geogr. Journ.*, 1912, Aug. and Sept.

[2] Wheeler, R. E. M., *Bulletin of the Board of Celtic Studies*, Vol. I, pt. 2, May 1922.

so-called food-vessel, which is in many ways a development from native British Neolithic pottery, and gives suggestions of a resurgence of native life. Later still we get cinerary urns as receptacles for the ashes of the dead, *who by that time were usually burned.* Among the "Beaker" remains one finds a few cases of cremation of the dead, but burial was the rule. Inside are often found what are for the present called "Incense Cups."

The "Beakers" as a type of pottery related to Continental forms, as well as the distinctive human types (see below) of this period, suggest very clearly an immigration, which probably just preceded the advent of bronze, though it was for a while customary to regard these people as the bringers of a knowledge of metal to this country. Among the Beaker people one finds examples of fairly tall, strongly built men with broad heads, sloping foreheads, strong brows, powerful cheekbones and lower jaws. Their ce-

phalic index is usually 80–84, their height may reach 5 feet 9 inches, the orbits vary, some being low and broad and others higher, the nose is moderate in most cases. This very pronounced type is more characteristic of South than of North Britain. In the latter region, and especially in Aberdeenshire, are remains, chiefly in "short cists" of stone, of squat, bullet-headed people resembling the darker elements in the population of South Germany at the present time.[1] In the South are also found more refined types, and some long-heads occur in burials of this age and type. It is thus probable that the invaders were not homogeneous, and it is also likely, both from the study of the pottery and from skulls, that they mixed with the people they found in the country. The food-vessels (evidence of native resur-

[1] See especially Low, A., *Proc. Anat. and Anthr. Soc. Aberdeen*, 1902–4 and 1904–6; Turner, Sir W., "Craniology People, Scotland," *Trans. Roy. Soc. Edinburgh*, 1914–15.

gence in face of the Beaker people) above mentioned occur in quantities in Ireland as well as in Britain, though beakers are very rare in the former. This strengthens the idea of intermixture already mentioned, and it seems best to think of the "Beaker people" as an immigration which, after settlement on the coast, spread cultural influences westward through Britain, and in the end amalgamated more or less with the people it found in the country, handing down its physical characters, modified to some extent, side by side with those handed down by the Neolithic elements with which it lived.

It is the general view that whatever the original motives of the immigration of the Beaker and Short Cist peoples, they sought to spread westward to get into touch with the gold of Ireland. The fact that early types of bronze celts (flat) are sometimes found near their remains is not now held to establish a connection between the Beaker immigrants and the spread of

bronze. The great catalogue of bronze implements of Britain compiled under the leadership of Mr. Peake is showing ever more clearly as it proceeds that a main line of spread of bronze lay across country from Hampshire via Newbury, the Cotswolds, and Worcester to the upper Dee on the Welsh border, and westward, probably down the Bala cleft.[1] Thanks to the work of Coffey[2] and of Crawford,[3] it is fairly clear from the distribution of gold lunulae and other objects that, in the Bronze Age, intercourse and probably trade was carried on between Brittany, Cornwall, Wales, and Ireland; it is probable that this trade was linked with other trade farther south, commerce in which probably both East and West Mediterranean were concerned.

[1] Peake, H. J. E., "Bronze Age in Wales," *Aberystwyth Studies*, Vol. IV, 1922, p. 17.

[2] Coffey, G., "The Bronze Age in Ireland." (1913.)

[3] Crawford, O. G. S., "Early Bronze Age Settlements in Britain," *Geogr. Journ.*, 1912.

In other papers[1] I have tried to discuss the characters and origins of certain elements of our modern population, which occur chiefly on coastal patches here and there from South-east Italy and the Maltese Islands round the Iberian Peninsula, past West France to Cornwall, Wales, and Ireland. The type concerned is broad-headed and strongly built, and dark-haired. It lacks the prominent brows and other distinctive features of the Beaker people, and is related to well-known types of the Eastern Mediterranean. Some discussions have led to the suggestion that this element may be a chance variant without special meaning, but its locations are too well marked and too numerous for such a view, and it seems best for the moment to associate it with movements related to the trade which, we infer from

[1] Fleure, H. J., and James, T. C., "Geographical Distribution of Anthropological Types in Wales," *J.R.A.I.*, 1916; Fleure, H. J., and Winstanley, Miss C. D., "Anthropology and Our Older Histories," *J.R.A.I.*, 1918.

archaeological data, existed in the Bronze Age, having Ireland and its gold as its special terminus. It is perhaps unnecessary to refer to a reviewer's facile suggestion that its characters may be due to influence of littoral habit; other types live side by side with it on every shore where it occurs. In the papers above quoted it is explained that, though we have no skulls of this type from British sources of Bronze Age, yet skulls of appropriate character have been found in association with early Bronze Age finds in Mediterranean localities.

The main fact emerging from the above discussion is that, from the days of megaliths and still more from the earliest Bronze Age, the British region seems to have had contacts both with the European plain and with the South-west of Europe and the Mediterranean.[1] Old views about

[1] See "Brit. Mus. Guide to the Bronze Age," 1920 ed., pp. 80 ff.; also Perry, W. J., "Relationship between Geogr. Dist. Megalith. Mon. and Ancient Mines," *Mem. Proc. Manchester Lit. and Phil. Soc.*, IX, 1915.

our deep isolation before Roman or at any rate Phoenician times have to be set aside, and allowance has to be made for introduction of broad-headed elements into a long-headed population, probably from the South-west of Europe as well as from the Continental side of the North Sea. In both cases we seem to be dealing with comparatively small immigrations, the types belonging to which have persisted to some extent in the present population, though their remains are rarely found in graves of later date.

It has sometimes been thought that one or other group of these immigrants may have been responsible for the introduction of Goidelic (Gaelic) Celtic speech into the British area, but this seems seriously improbable, though we know far too little to be at all dogmatic. In forming what can for the present be only very preliminary hypotheses about language-spreads, it is advisable not to put the advent of a language farther back than

seems inevitable from the inferences of archaeology, and in this case there are movements of the end of the Bronze Age, and of the transition period, when the use of iron was spreading, which could co-ordinate with the few points known about the spread of languages to ancient Britain.

If the catalogue of bronze implements can be made fully European by international co-operation of scientific men, we may expect considerable additions to our knowledge of the movements of a period which seems to be full of meaning for those who try to trace the foundations of modern civilisation. It is already making us see more clearly that the "Beaker" immigration and its routes are not the same as the routes along which spread the earliest bronze axes; it is helping to differentiate minor movements, and gives us clues here and there, which help us to avoid mistaking culture-spreads for mass-movements. And in particular it has brought together evidence of an important movement analysed

out by Peake,[1] and announced in a preliminary way by Crawford.[2]

In this movement Peake thinks the leaders were long-headed swordsmen, who had been lords of a peasantry in Central Europe (and therefore probably a broad-headed peasantry), and the date of their arrival in East Britain is roughly calculated at 1150 B.C. Here it should be noted that already in pre-Bronze-Age days there was evidence in the Beaker immigration of two types at least, probably a leader-type with strong physique and mighty brows, and a follower-type squat and bullet-headed. The finding of sickles and many axes as well as swords suggests the presence of a peasantry, and the finds are now either along the edges of the presumed woodlands or near the streams. Peake thinks the valley-settlement may have

[1] Peake, H. J. E., "The Bronze Age and the Celtic World." (1922.)

[2] Crawford, O. G. S., *Antiquaries Journal*, Vol. II, p. 27, 1922.

begun at this remote date, though evidence is as yet very slight, and we have still to learn far more about early agriculture on the wood-free uplands and coast-zones, if data of this kind can be secured.

From the distribution of the catalogued finds of leaf-shaped swords of bronze, belonging to the latter part of the Bronze Age, Peake infers that the Thames was the main entry for the invaders, but that they also used the Wash and other parts of the east coast. They dominated the east of England and Scotland, but their swords are not found at all commonly in the south-west, where a rapier-like dirk was the characteristic weapon, and is connected with the Brittany, Cornwall, Wales, and Ireland province of civilisation of those days. They did, however, reach Ireland, and the swords are found along what would seem to have been the Welsh ways to Ireland. In Ireland the swords are very numerous, and one cannot but think that Irish gold was an important considera-

tion in these movements. Peake has suggested that it may have been these leaf-shaped sword-people, who carried with them the Gaelic–Celtic languages, and it is well to have this possibility in mind without emphasising it overmuch; such a theory would at least help us to understand the persistence of Gaelic or pre-Gaelic-Celtic river-names like Ouse and Usk and related forms in England.[1] We must, however, by no means disregard the possibility of a spread of the Bronze Sword civilisation, and maybe the Gaelic languages, from Brittany to Ireland. So far as racial types are concerned, we shall

[1] Mr. R. Ellis tells me that Ed. Lhuyd at the end of the seventeenth century drew attention to these place-names as evidence of Gaelic speech in prehistoric Britain. Zimmer and Kuno Meyer thought the Gaelic languages reached Ireland without touching Britain (see discussion and bibliography in Fleure, H. J., and James, T. C., *J.R.A.I.*, XLVI, 1916, p. 147). The new evidence furnished by Peake ("The Bronze Age and the Celtic World," 1922) may reopen the question, but further consideration is necessary before forming an opinion.

probably not be far wrong if we make what must be for the present largely a guess—if we suppose, that is, that in this invasion our population got an accession, probably its first of many accessions, of the tall, fair, rather long-headed aristocrats, who formed so notable a feature of English life, until the rise of the industrial and financial plutocracy swept them aside.

The contrast between East Britain with its many Beakers in pre-Bronze-Age days, and West and South-west Britain with its wealth in great stone monuments, is to some extent paralleled by the difference at the end of the Bronze Age, when the east has an abundance of the swords, the west, and especially the south-west, very few. A line dividing south-east from south-west in cultural details has been a feature of British life from very early times, though naturally one would draw it in different positions from the evidence of different periods.

The line of movement of the Bronze

Sword-men was apparently from the Hungarian plain north of the Alps to Britain, and indicates more ability to pass through forest than was shown in previous movements, and probably also more agricultural settlement and making of trackways.

These movements were followed closely by the introduction of iron for weapons, and on the coming of iron into Britain much has been worked out of recent years. Hengistbury (Christchurch, Hants) was trading with an iron-using people of South-west France[1] in the fifth, perhaps as early as the seventh century B.C., and there are remains ascribed to this period here and there in South England. Socketed bronze celts of a type common in Brittany occur in Wilts, Berks, and Oxon,[2] and the Glastonbury[3] report shows that this intercourse between South and South-west

[1] Bushe-Fox, J. P., "Excavations at Hengistbury Head, Hants," *R.R.C.S.A.*, III, 1915.

[2] Peake, H. J. E., "English Village," p. 91. (1922.)

[3] Bulleid, A., and Gray, H. St. G., "The Glastonbury Lake Village." (1911, 1917.)

Britain and West and South-west France went on until Roman times.

But in East and South-east England there are very numerous traces of connections in the third century B.C. with North-east Gaul,[1] and some of these finds are so located as to suggest settlement proceeding, if slowly, in forest clearings. These newcomers are almost certainly the Belgae described by Latin historians as occupying parts of Britain, and practising agriculture to a much greater extent than the other peoples of Britain. It seems probable that these Belgic Gauls, or at any rate their leaders, were tall, fair men, and various suggestions have been made as to their being represented by a tall, fair, rather broad-headed element in our eastern population. Recent work has tended to connect with these immigrants and this period the construction of great earthworks of the type known as Contour

[1] Evans, Sir A., *Archaeologia*, LII, 1890, pp. 387–8 ff.; Bulleid & Gray, *op. cit.*

camps.[1] Those in Wales seem to be native work done within the British-Roman period.

We have now very briefly reviewed the evidence for various movements of peoples towards Britain before Roman times. Those evidences are almost as much anthropological or racial as archaeological for earlier periods, but become more archaeological later on, for which reason they have been treated more briefly. Before proceeding to discuss their bearing on the present constitution of the population and other related problems, it is well to draw the attention of readers to a matter which presents much interest, but cannot, at least as yet, be argued out in any detail.

Until Schliemann, Sir Arthur Evans, Professor Myres, and others revealed the pre-Hellenic cultures of the Eastern Mediterranean, there were many scholars who looked upon the Homeric poems as purely

[1] See articles by Wheeler, R. E. M., and Sayce, R. U., in *Trans. Hon. Soc. Cymmrodorion*, 1922, for further references; also G. B. Grundy, "Ancient Highways of Wilts, &c.," *Archaeol. Journal*, Vol. XXV.

works of imagination with perhaps vague echoes from oral tradition. Archaeological discoveries have not, it is true, confirmed the individual incidents of the poems—that is not their province—but they have made it highly probable that the substratum of truth in the poems is fairly large. It has also become clear that the legends of Minos and the Labyrinth and the Minotaur contain much truth, and that oral tradition has a considerable value, as York Powell[1] held in his day.

In matters concerning the British Isles our older legends and mediaeval histories have similarly been thought to be freaks of the imagination. It is true that we still need recensions of manuscripts in several cases, and they doubtless contain much that is of the nature of imaginative embroidery for various purposes; but it may be urged that in spite of all this

[1] See Life of Professor Fredk. York Powell, by Elton, O., which contains an essay, "Tradition and its Conditions," by F. York Powell.

there is much more truth in the old stories than has been supposed. They nearly all begin with accounts of long-past connections with Troy and the Mediterranean, stories which seem to owe their foundation to Virgil, but which nevertheless will be worth looking into some day when we can compare more exactly their various forms, in view of the archaeological demonstration of relations with South-west Europe and quite possibly with the Mediterranean in the Bronze Age. Relations between Galicia, West France, Cornwall, and Ireland are certainly suggested by archaeological evidence as well as by legendary history. It is highly probable that the grains of truth in this old story have long since become too much mixed up with imaginations and adaptations from Virgil to be discoverable. However that may be, it is interesting to note that Geoffrey's "History of the Kings of Britain" starts Book II with an encounter between immigrants who have come to

South-west Britain from West France and immigrants who have come across the North Sea to East Yorkshire. The archaeological evidence of the apparent contacts between the civilisation of the people of the Great Stone Monuments and the Beaker people is curiously in accord with the legendary history, but it is probably too far off in time to be brought in as the true parallel. We have already seen that the south-western region was usually fairly distinct from the eastern region in culture in pre-Roman times, and this fact continually emerges from the legendary history as well. The division of the country into a Cornwall (the south-west) of varying extent, Loegria (the east and south-east, in fact the English plain), Cambria beyond the Severn, and Albany, north from the Humber to Caithness, is a fair parallel to the division into archaeological provinces which most students would make for their own purposes. Some time later in the legendary history we hear of Dun-

wallo, King of Cornwall and afterwards of Loegria, who is said to have established regular laws, to have proclaimed certain roads as inviolable, and to have organised places of sanctuary, the roads being much developed a little later. Following this we hear of connections with North-east Gaul, and of participation of British folk in the Gauls' attack on Rome. The mapping of archaeological finds certainly suggests road development and more definite agricultural settlement some few centuries before the arrival of the Romans, and the finds demonstrate abundantly cultural connections at least with North-east Gaul, connections which are a rather new feature in the archaeological record, as they are in the legendary history. Another curious element in the legendary history concerns the erection of Stonehenge, which is there dated as belonging to post-Roman times. There is no intention of discussing the famous question of its date here, beyond saying that most archaeologists ascribe it

to the Bronze Age, on what seem reasonable grounds. That is not, however, the only point of interest; the story says that Stonehenge previously existed, as a sacred circle, at Killaurus in Ireland, and was brought thence by the skill of Merlin. Quite recently the stones of the inner circle at Stonehenge have been investigated petrologically by Dr. H. H. Thomas of the Geological Survey, and he finds unmistakably that they could not come from any place nearer to Stonehenge than the Prescely Hills in the west of Pembrokeshire.[1] This makes it possible that they were transported by man from Pembrokeshire to Stonehenge, for natural transport is highly unlikely, and Pembrokeshire is at least on the line of the ancient trade between Ireland and South-west Britain. It would be interesting to get a clue as to whether the blocks once existed elsewhere as a circle. We thus see that scientific

[1] Hawley, Lieut.-Colonel, "Excavations at Stonehenge," *Antiquaries Journal*, Vol. I, 1921, p. 39.

investigation is giving partial confirmation to an otherwise almost incredible part of an old tale. One may therefore plead for a fresh approach to the old British and Irish tales if and when questions of dates of manuscripts and comparative values of alternative versions can be estimated by palaeographic specialists.

It is more generally allowed that the Welsh "Mabinogion" contain germs of history, but there is little in them that concerns us for race-study in the present state of our knowledge, save the evidence of connections oversea with Ireland, connections which, from archaeological evidence, seem to have been of importance at intervals from at least the days of the great stone monuments. Not only these famous romances, however, but also the folk-tales of Wales have evident traces of social history in them, and I have tried elsewhere to suggest[1] a few such points

[1] "Ancient Wales, Anthropological Evidences," *Trans. Hon. Soc. Cymmrodorion*, 1917.

in connection with the story of the Lady of Llyn y fan fach. It is probable that if our knowledge of comparative folklore and of archaeology goes on increasing it may be possible some day to look into these tales and to extract more from them than has as yet been considered possible.

Before proceeding to the survey of movements of peoples in Roman and post-Roman times, we should summarise the probabilities of racial contributions to the British population from the movements already discussed. At the outset we are met by a difficult question as to the relationship of our British types to the racial types recognised for the continent of Europe. The generally accepted view, which seems well established on abundant evidence, is that European peoples can be conveniently described as clustering around three standard types called Alpine, Mediterranean, and Nordic, while on the Arctic Tundra and spreading south therefrom in Finland and North

Russia are peoples who approach a fourth type called Tungus or Northern Mongol. The Alpine race is distinct enough, as the people are broad-headed and occupy the Illyrian and Anatolian highlands (eastern, tall, high-headed section of the race), and the Alps and the Central Plateau of France (western, stocky, and not very high-headed section of the race). In the Carpathian arc and on its outer side, as well as in the centre of the Balkan peninsula, are peoples who grade between one and the other of the types, or show the characters of the one in some individuals and of the other in others. That the term "Alpine race" is not quite suitable may be at once conceded, but it has passed into general use, and there is at any rate the interesting fact that the breadth of the head reaches a maximum for this stock in some of the inbred groups of the Alpine valleys. We may use this fact as a simple illustration of an important general principle, the principle that race-characters should not

be thought of as present in unchanging fashion from the earliest times till now, but as features developing with the lapse of time. If once this is realised, we can grasp the further point that race-types may evolve from the general population of certain localities, that they may be local specialisations. A modern race-type would thus be a *terminus ad quem* rather than an *origo a qua* ; it represents a present phase towards which there has been long-continued convergence. To use a zoological analogy, with reserves, one may say that the characters of such-and-such a breed of cattle or of dogs are not characters inherited unchanged for thousands or even hundreds of years in most cases, but characters which have emerged and become fashionable often within the last fifty or one hundred years. They are the latest products of breeding, and have arisen from modification of less specialised forms under the influence of the breeders' effort. It is very questionable whether

we have much in the development of human races that can profitably be compared with the breeders' influence, but we nevertheless have emergence of breeds in a broadly analogous fashion, thanks to other modifying influences, such as, in the writer's opinion, the modification of conditions of later development above mentioned or climatic and other physical reactions in particular regions.

It is claimed that this concept of race, faithfully applied, helps us to understand more clearly than of old the relation of European long-heads to the two abstractions we call respectively the Nordic and Mediterranean races, abstractions of the utmost value as descriptive devices, provided we are not thereby led to think that every European long-head must be a member of one or other race, or a cross between the two, i.e. provided we do not suppose that all European long-heads were *ab initio* either Nords or Mediterraneans.

In the earlier part of this essay we saw

that several types of long-heads existed in Late Palaeolithic (Early Neanthropic) times in Europe. It will be evident that they form the bases of the European long-headed populations, i.e. of the people away from the mountain axis of Europe. Now, in different parts of Europe, that population in the course of the last seven thousand years has found varying opportunities, and has utilised them variously.

Around the Western Mediterranean the coasts and islands have long encouraged some measure of intercourse, both geological and climatic conditions limited forest growth considerably, and climate encouraged cultivation from early times. We have, in fact, here one of the great regions of early settlement and intercourse, a region where the old wild hunter's life soon became impossible on any large scale, and a more complex and more settled type of society became the rule. The temperature clearly increased as the European Ice Sheets decreased, and the Medi-

terranean passed from the domain of the all-the-year-round westerlies to that of the winter westerlies and summer high pressure and sunshine. The warmth and sunlight would seem to have acted as a stimulus which maintained the development of pigment in the human skin, while the warmth also hastened sex-maturity, especially among people of sedentary life, and thus kept short or even may have shortened the growth cycle. Dark hair and eyes, an olive skin, short stature, comparatively slight bony development, are all features of the people of the Western Mediterranean generally, and among them are undoubted survivals of the "Grimaldi," and let us say also the "Combe Capelle" types, may be of the Cro-Magnon as well. Long-headedness is a general feature inherited from these old types, and the modern population may be described as composed of their modified descendants with these types to some extent amalgamated. The nose is usually less broad than in the

"Grimaldi," if less narrow than in the Cro-Magnon. The orbit may be higher than in these old types, but is not so high as in the Nordic type to be discussed next after this one. The brow-ridges are not often very strong, this being one of the many indications of the moderations of bony development. The general type whose characters and evolution have now been suggested is called by anthropologists the Mediterranean race-type, and we shall not be far wrong if we describe it as an evolution from intermixed long-headed types of the Early Neanthropic (i.e. Late Palaeolithic) period around the basin of the Western Mediterranean, only a portion, be it noted, of the old domain of the long-heads. In the Arabian region we might similarly suggest that environmental stimuli have evoked still more pigmentation, and, in ways too complex to discuss here, encouraged growth of the nasal chambers, giving the large nose with narrow apertures that is so well known. Here are,

then, two well-marked types, the Mediterranean and the Semitic, arising in relation to two well-marked provinces of diverse physical character and human opportunity. In the regions between them there are long-heads, who have suffered more or less analogous evolutionary changes giving types in the Aegean and in North Africa, which approach the Mediterranean or the Semitic without being fully either the one or the other. And right through the whole region are survivors of the Grimaldi and other ancient breeds.

From a continuous area of occupation of mixtures of early long-heads we thus seem to see race-types being modified in the course of time, so that in one part of the area, ultimately, one type becomes characteristic and in another part another type. When these "parts of the area" are strongly marked and the types become very evident, we may speak of them as areas of characterisation, remembering

that as we trace each type beyond the border of the area it will become less clear, and if we go on far enough we shall find ourselves reaching another area of characterisation.

The West Mediterranean and the Arabian areas are to some extent isolated from one another, and it is probable that some grade of isolation is a necessary factor of the accumulation of divergent changes, such as those distinguishing Mediterranean and Semitic race-types.

What has been argued out concerning these two types is analogous to what must next be argued out concerning Mediterranean and Nordic types. The ancient long-heads were said to occupy Europe apart from the mountain axis. North and east of it was an area stretching from Caspian to Baltic lands, south and west of it was the Mediterranean area already discussed. These areas were partially isolated, but linked by a human connection through Gaul, and off this connecting-link

lies Britain. In the area north and east of the mountain axis early conditions must have been tundra-like, and we know that under tundra conditions man has skin pigments. Snow-glare, like other varieties of strong light, seems to be a stimulus to pigmentation, so it is quite possible that the Early Neanthropic people of this area were at any rate not blond. The shifting of climatic belts to their present positions has made the Baltic lands a region of considerable cloudiness, and, away from the shores, of great forests. The comparatively weak sun and the abundance of shade are in all probability factors which have diminished the evocation of pigment. The coolness of the region combined with the long maintenance of open-air life seems to have been a factor delaying age of sex-maturity, and consequently prolonging the growth-cycle, so that, with good food, the people grow very tall and muscular, with strong bones markedly ridged for muscle attachment.

One might argue for the large narrow nose and the high orbit as responses to environmental conditions, whether due to natural selection or to change of stimuli in later stages of growth. With the development of cooking, the jaw-muscles are less exercised, and neither grow so large nor push out the cheekbones quite so much, and the face is typically narrower and more finely contoured. There are, however, other factors affecting the cheekbones, which are not well understood.

We shall probably not be far wrong in picturing the evolution of a tall blond type with a clear skin, through which the blood may easily be seen, with a large narrow nose and finely cut features, strong bones, often brow-ridges and high orbits, and a finely curved "well-filled" head-contour, but a type retaining the long-headedness of its forbears. It is true that the head-contour is "well filled" and the skull is often a little less narrow than in the brunet Mediterranean. It is also true that

blondness may be imperfect development; one does find long-heads who are more or less brunet, though not so dark as those of the Mediterranean. One also finds a florid variety in which something, probably exposure, has interfered with the small blood-vessels of the skin of the cheek.

Broadly we may claim North-west Europe as an area of characterisation of the Nordic type evolved from Early Neanthropic long-heads.

But Gaul and Britain between the "Mediterranean-race" and the "Nordic-race" areas of characterisation also had Early Neanthropic long-heads, and in those intermediate lands evolution has reached neither the one goal nor the other. We have among us immigrants from the Nordic area, Saxon and Dane and Norseman, and their prehistoric analogues; we probably also have immigrants—one imagines they are of Neolithic and Bronze Age dates—from the Mediterranean. But our long-heads are in the main "betwixt and

between," most typically brown-haired and grey-eyed, with taller stature than the Mediterranean type, but still not quite up to the Nordic standard in this and other respects, save in certain districts. It is thus claimed that alongside of people of Mediterranean race and of Nordic race, who have immigrated into these western lands, we have many long-heads who have simply evolved more or less *in situ*, no doubt with admixture, from our Early Neanthropic long-heads without attaining either the Mediterranean or the Nordic standard characters. In other words, though many of our long-heads are betwixt and between these two standard types, which are after all merely convenient abstractions of our own science, they are not necessarily due to intercrossing of the two, but are more probably derived, like them, by descent with modification from Early Neanthropic long-heads. Among them are notable survivals, comparatively little modified, of those early

long-heads, and these are naturally most conspicuous in remote areas.

Though the account here given is less simple to grasp than the statement that we are mainly Nordic, with Mediterraneans in certain areas and widespread mixtures between the two, it is seriously claimed that this more complex description gets closer to the truth and also makes " race-development " seem a much more natural process. The fully-fledged Nordic, Mediterranean, or Semitic long-head is the *terminus ad quem*, i.e. the goal, of a long-continued process of descent with modification in an area of characterisation rather than a type of untold antiquity and permanence.

I have elsewhere argued against extreme views of impermanence of race-types such as have been published under the name of Boas, and other writers have done so much to destroy Boas's arguments, that those doctrines may be considered to be discarded in serious anthropology,

though they are still quoted by political and other writers who use anthropological material. Descent with modification is obviously a slow process, for in every parish of our country markedly contrasted types live side by side, and have so lived for centuries, and yet, in spite of intermarriage as well as of substantial similarity of conditions, they remain distinct.

The reader will probably have grasped the author's mental picture of the working of " descent-with-modification " so far as human races are concerned. Without needing to enter into the controversy about inheritance of acquired characters or their non-inheritance, it may be taken as generally agreed that stimuli and inhibitions from our environment exercise a powerful influence on the late phases of growth—good and wise feeding promotes general growth in some measure, strong light influences the skin in one way or another, climate is certainly related to

age of sex-maturity. Betterment of conditions of infancy delays the process of hardening of muscles and probably of closure of sutures, and so seems to the author to have opened possibilities of modification of skull form. The improved conditions, once, for example, the milk of domestic animals was available, were repeated generation after generation for most of the population, and the modification repeated generation after generation. If we tried to test whether they have become truly "inborn," we should fail to reach a conclusion, for the babies concerned would die off were we to try to bring them up under the conditions of Early Neanthropic days. It may be suggested in all humility to biologists that there is room for thought about permanent alterations of conditions of growth as probable factors of evolutionary change. The stimulus, whether wholly external or not, evoking growth-features is perhaps as much a feature of the embryological

process as is the inborn tendency on which it acts.

Having now surveyed the foundations of the South British population, and sketched current hypotheses as to the movements of people concerned, our next task is to consider subsequent changes, in connection with which there is usually some documentary evidence. Of the influences, if any, of the Roman occupation on the South British population, very little is known at present. One hears occasionally from laymen of certain persons " of Roman type " living in certain places ; it seems usually to be a case of " Beaker types " more or less mildened, and we have no means of judging finally whether Beaker types now living are descendants of the original arrivals of the Late Stone Age or descendants of similar elements in subsequent movements pre-Roman, Roman, or post-Roman. Moreover, the Roman occupation might well have brought types

far other than those of Roman patrician families; the legions were gathered from various distant parts. For the present it seems best not to attempt any estimate but merely to suggest that probably a British rural population, in the main, remained in occupation of the land, spreading into forest clearings no doubt under the influence of the great road-makers.

Of the changes of Late Roman and immediately post-Roman times so much has been written that it would be foolish to attempt a summary. A few movements seem to have had marked influence on local populations. These may be very briefly enumerated.

(1) Immigrants from Ireland (Gwyddel) seem to have fallen upon the coasts of Wales at many points, and one notes, for example in mid-Cardiganshire, a distinct change of proportions of types in the population as one goes south through Llanrhystyd. South of Llanrhystyd the shore becomes more open and the land

more accessible from the sea, and a belt of country inland from the open shore has a much larger proportion of fair-haired, moderately long-headed inhabitants with biggish frames than either the Aberystwyth region to the north or the Cardigan region to the south. Everyone remarks on resemblances between many people in that region and types one meets in Ireland. Evidence of place-names with "Gwyddel" in them, of certain monuments, and so on, all point to this movement from Ireland in Late Roman or immediately post-Roman times. It is quite likely that movements of this kind were responsible for destruction of some of the Roman stations on the Welsh border, etc.

(2) Immigrants from South-west Britain passed over to Armorica in numbers sufficient, according to Loth,[1] to revive a Celtic language in Brittany; it is supposed that this was the movement which gave

[1] Loth, J., "L'Emigration bretonne en Armorique." (1883.)

Brittany the Brythonic language which still survives there. As South-west Britain and Armorica probably already possessed very similar mixtures of types, it is difficult to estimate what influence this may have had beyond a weakening of the "leader element" in Britain.

(3) Recruits from Britain fought and died in wars of the later Roman period, and we have especially the story of Maxen Wledig (Maximian) and his campaigns. This again no doubt drained off many leaders, and the long-continued disorders must have reduced their numbers heavily too.

On the whole, one may well suppose that in times of trouble the leader element, largely derived from the more recent immigrant peoples, would sink in proportion to the aboriginal stocks, however much the latter might suffer.

(4) Teutonic-speaking immigrants arrived on the east and south coasts in great numbers over a long period, while Norse-

Teutons trafficked and ravaged down the Hebrides and the Irish Sea.

The work of E. T. Leeds [1] has shed much light on the early "Anglo-Saxon" movements to the east coast of Britain, showing that they usually settled near some navigable stream, or along the course of some tributary. Their locations are rarely near a Roman road or a Romano-British settlement of any size. They were rural folk, and some of the Romano-British towns may have survived, as Gomme [2] argues in the case of London though he hardly proves his case.

For the physical characteristics of these invaders evidence is forthcoming, especially from the studies of Parsons,[3] and of Horton Smith,[4] with confirmatory facts

[1] Leeds, E. T., "Archaeology of Anglo-Saxon Settlements." (1913.)

[2] Gomme, Sir L., "The Making of London," p. 91.

[3] Parsons, F. G., *Journ. Roy. Anthr. Inst.*, 1911 (Folkestone) and 1913 (Broadstairs).

[4] Smith, R. J. Horton, *Journ. Roy. Anthr. Inst.*, 1897.

from Peake & Hooton.[1] The general conclusion from these researches is that the new-comers were nearly all long-headed, with indices especially between 70 and 77. The best opinion seems to be that the skulls are not low, in fact in three out of six Folkestone crania there is not much between the basi-bregmatic height and the maximum breadth, and as the skulls are narrow they may be called hypsistenocephalic. They are skulls of people of rather short stature, but they differ from the Long Barrow and earlier skulls, in that the orbits are rather high and the cheekbones not so outstanding.

There is an unfortunate poverty of evidence about the characteristics of the invaders of the west in those troublous times, but we are led to think that among them were men of the tall, bony, blond type. It is true that the stories tell of "black Danes," and this has at times been

[1] Peake & Hooton, "Anglo-Saxon Graveyard at E. Shefford, Berks," *J.R.A.I.*, 1915.

thought to indicate a dark-featured race, but the adjective black may have referred to accoutrements or any other accidental matters.

Here and there, on or near the west coast, are "patches" in which the tall blond is numerous; such, for instance, are the end of Lleyn Peninsula (Carnarvonshire), the district around Newcastle Emlyn (Carmarthenshire), and the southern peninsulas of Wales. Tallness cannot, however, be said to be universal among the blonds.

It is probable, then, that in the post-Roman centuries the long-headedness of the population was, on the whole, emphasised, and we judge that the blond long-head became a very important element of the population.

The next serious evidence of the character of the population surveyed chronologically is again from Parsons' valuable work. He has studied large quantities of bones from what were probably mediae-

val ossuaries at Rothwell [1] (Northants) and at Hythe [2] (Kent). The Rothwell series of about 100 males shows indices ranging from 69 to nearly 86, figures sensibly like those for the modern population of this country. The crowd gathers around the indices of 74 and 75, and is divided from another crowd about the index 78. In samples of the modern population there are often maxima round about 75–76 and about 79. Only a few are really high-headed, and here again is agreement with modern samples generally. The Hythe series included 590 skulls, of which 326 were skulls of adult males. It is a series remarkable for the shortness of the skulls, so that the cephalic index runs high, the average for the male group being near 80. The back of the head goes up almost vertically in many of them, and using current terms one might fairly say that

[1] Parsons, F. G., Report on the Rothwell Crania, *J.R.A.I.*, 1910.

[2] *Idem*, Report on the Hythe Crania, *J.R.A.I.*, 1908.

they are in many cases of Alpine type. One cannot but recall that in mediaeval times Kent was of special importance as a link in the communications between London and France, and that the broad-headed Alpine type is very abundant among French peasants almost everywhere.

There is at present no evidence of the survival of any considerable broad-headed element in the population of the district, but our knowledge of the craniology of the people of East and South England is very poor.

Direct evidences of the physical characters of English and Welsh people in recent centuries is scarce, but Professor F. G. Parsons [1] has worked out the crania of some Londoners of the eighteenth century. He did this to test a suggestion by Macdonnell [2] that these crania were closely

[1] Parsons, F. G., "Long Barrow Race and Modern Inhabitants of London," *J.R.A.I.*, LI, 1921, p. 51.

[2] Macdonnell, *Biometrika*, Vol. III, 1904, p. 242.

similar to those of Long Barrow men. He found them to be more like Anglo-Saxon heads.

Comparing Anglo-Saxons with Long Barrow types, he found the former had lower skulls, rather shorter too than the earlier ones. This is very much in the general line of skull evolution apparently correlated with diminution in importance of the jaw-muscles, and especially of their importance in early life (see p. 30). Also connected with this is the fact that the cheekbones stand out less. The face is, as it were, more compressed from side to side, the eyebrow ridges are less marked, and the orbits are higher. The eighteenth-century skulls seem fairly close to the Anglo-Saxon ones, but show the changes that distinguish both from Long Barrow men carried a little further than in the Anglo-Saxons.

Whether we should argue from this that the eighteenth-century Londoner is essentially Anglo-Saxon is questionable. We

may be in presence of evidence of a general change of type, with the skulls of Anglo-Saxon date representing one phase and the eighteenth-century skulls another, but not a very different one. If we knew more about the hair- and eye-colour of the Londoners of two hundred years ago, we might be better able to judge.

The surveying of the modern population has not gone very far as yet, but Parsons has gathered together the data on this subject with bibliographical details in two papers.[1]

The pioneer work on this subject was done by Beddoe,[2] and the reader may be preferred to the papers by Parsons for further bibliography.

There is no doubt that in every part of England and Wales several types live side by side. Often, certain types are

[1] Parsons, F. G., "Colour Index of British Isles," *J.R.A.I.*, L, 1920, p. 159; "Cephalic Index of British Isles," *Man*, XXII, 1922, No. 14.

[2] Beddoe, J., "Races of Britain." (1885.)

found only as rare exceptions, occurring in perhaps 1 per cent. of the population or less, but there are usually places where these, generally rarer, types occur in considerable numbers, perhaps making 20 or 30 per cent. of a sample. It is from evidence such as this that we are forced to gather our points as to the distribution of physical types in Britain.

The observations of Beddoe go to show that especially in the North and East of England the population is predominantly fair and the colouring of hair and eyes agrees fairly closely, i.e. we get fair hair and eyes most often without brown pigment. In the north there are pockets of the old dark long-heads here and there in the Tynedales, and large numbers occur in the Pennines, but the dominant type has long head and straight profile, a fine nose, grey eyes, and fair hair. It probably owes much to Scandinavian and Danish influences, but one must not forget that the invaders of the Late Bronze Age and the

Early Iron Ages seem to have been mainly of the same fair type. In Tynedale, and especially towards the west, one finds a good many men with the broad heads and strong brows which we associate with the "Beaker type" (see p. 48). The Yorkshireman of the north and east is not only generally fair and long-headed but also tall and well-built, and Beddoe found that this type dominated even in Elmet and along through the valleys of the Pennines. In remoter corners, however, especially towards Derbyshire, the darker types are much more numerous, though in the Derbyshire dales we again find numbers of the Beaker type, and may note in passing the importance to these people of the Peak District in olden time.

In Cumberland and Lancashire fair long-heads are abundant enough, but the little dark long-head is also well marked in the latter; while it seems probable that observations would confirm the guess that there are patches of the dark big broad-

heads on the Lancashire coast, as along the west coasts generally.

Beddoe found the North of England and Derbyshire about the fairest region of the whole country, and suggests the importance of studying dialects in correlation with race-type, pointing out that the Northumbrian burr probably has a Scandinavian origin.

Lincolnshire again is strikingly fair, with probably a good number of the "Beaker" men. East Anglia has more contrasted types, for whereas the fair people abound in many parts there appear to be nests of the older dark long-heads around Brandon and in a few other spots on heath or marsh, which have not proved attractive to invaders.

The Midlands obviously retain a larger element of the old stocks than do the north and east; they were of old densely wooded and were cut off from East Anglia by great marshes. Beddoe was probably right in thinking that the Vale of Aylesbury and East Worcestershire, both areas

of fertile land early occupied by Saxons, have a rural population fairer than the average of the Midlands. Parts of the Chiltern county[1] show a considerable degree of dark colouring and are certainly a region that long remained sparsely peopled. It has also been thought that it was a region long left untouched at the time of the Anglo-Saxon movements.

In the south, Kent has tall fair long-heads in large numbers, and so have Surrey, Sussex, and Hampshire; but in the Romney Marsh, the Weald, and the north of the New Forest are pockets of darker types of older standing.

As one goes west, either in the Midlands towards the Welsh border, or in the south towards the border of Wilts and Somerset or Dorset and Devon, the numbers of dark-haired people seem to increase, the older

[1] Haddon, A. C., "Physical Characters, People of Barley, Herts," Rept. Brit. Assoc. Adv. Sci., 1897, p. 503; Bradbrooke, W., and Parsons, F. G., *J.R.A.I.*, LII, 1922, p. 113.

breeds become more conspicuous. In parts of Dorset there are Celtic Church dedications, and we have a number of indications of intermingling of Saxon and older elements of the population in the west of Wessex.

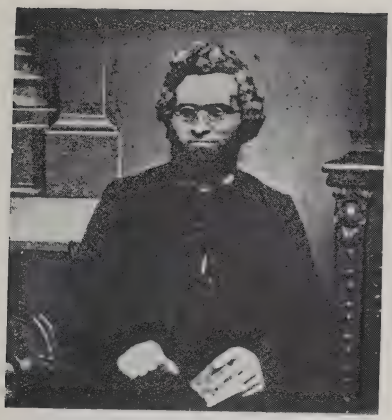
Devon appears to show much dark hair with grey eyes. Some districts like that around Dartmouth are said to be specially dark. It seems that on the coasts of Devon[1] there may be several coastal patches with dark and broad-headed, stalwart men. On Dartmoor the older types seem to be highly characteristic.

Cornwall has the darkest population in England with dark long-heads widely distributed, but also the stalwart dark broadheads, who are found in nearly all the fishing harbours.[2] The south-west would well repay closer investigation of its physical types.

[1] Fleure, H. J., and Winstanley, L., *J.R.A.I.*, XLVIII, 1918.

[2] Andrew, T. H., "The Cornish Fisherman Type," *Man*, XXI, 1921, No. 83.

AN EXAMPLE OF THE SURVIVORS OF ANCIENT TYPES AROUND THE PLYNLYMON MOORLAND WITH VERY LONG HIGH HEAD, STRONG BROWS AND CHEEK-BONES, MARKED TEMPORAL HOLLOWS, DEEP-SET EYES (see p. 193)



PHOTOGRAPHS TAKEN BY DR. JOHN BEDDOE (CA. 1870) OF SURVIVORS OF ANCIENT TYPES IN WALES

Both came from the Plynlymon area and were well-known able men

For data concerning Wales reference may be made to a detailed study in the *Journal of the Royal Anthropological Institute*.[1] Very early types with very dark colouring and sometimes florid cheeks occur in remote moorlands like those around Plynlymon and the Black Mountains of Carmarthen. A tall, very long-headed, dark, bony type is noteworthy among the Denbighshire hills, as it is in the west Highlands; its origins remain quite unknown. The Beaker type is scattered over Wales, but occurs especially in the deep cleft that runs through Bala towards Dolgelley; the stalwart, dark broad-heads occur on coastal patches especially in South Glamorgan, North Pembroke, the Newquay district of Cardiganshire, the Ardudwy district at the north-east corner of Cardigan Bay, and parts of the Carnarvon coast. The Peninsulas of Wales—and here Anglesey may be included—are rich in mixed

[1] Fleure, H. J., and James, T. C., *J.R.A.I.*, XLVI, 1916.

types, but they usually have many more fair long-heads than the rest of the country.

Red hair is found in a percentage of the population which lies between 3 and 4 in most parts of the country, but rises somewhat above this in the north, where a "fair red" is rather well known. In Wales pockets of red-haired people have been found, and evidence, though somewhat inconclusive, suggests their distribution along a zone between an area with specially numerous fair people and an area with very dark long-heads. There is just a possibility that red hair is a character appearing in certain intercrossings of breeds, but this requires much more study.

Except for the patches with noteworthy numbers of Beaker types or dark broadheads, the country in general has a very uniform average of head index. It may be found to be rather higher in the east and among certain classes, but this is as yet largely conjectural.

EXAMPLES OF THE TYPE OF "BEAKER" PEOPLE (pp. 48–52) FROM DR. J. BEDDOE'S COLLECTION OF PHOTOGRAPHS

AN EXAMPLE OF THE SHORT, DARK LONG-HEADS, THE TYPICAL PEOPLE AROUND THE MOORLAND AREAS OF SOUTH-WEST BRITAIN

It seems probable that the uniformity of average does not indicate uniformity of the mixture, for in some places the long-heads are tall blonds, in others dark-haired, grey-eyed men of moderate stature, in others, again, little dark long-heads. Probably the average of head index would be lowest in the last group, for among them one usually finds a number with heads of remarkable length.

The occasional Norman, Flemish, Jewish, Huguenot, and other strains of older historic immigration are probably mixed almost beyond the possibility of tracing them out, though correlated study of family names and old industries might help here.

Enough has been said to show that the distinction between English and Welsh, or English and Cornish, is hardly a racial one. It is taken as probable that the Brythonic language (Cornish, Welsh, and Breton) was spread in this country by the Early Iron Age invaders, who seem

to have been mainly long-heads,[1] if we may judge from Kent and Yorkshire. They probably spread into Wales largely via the Severn and Wye,[2] and so their advance into the west preceded by only a few centuries the coming of the Anglo-Saxons to the English Plain. It is probable that the folk-tales of Wales [3] give reminiscences of their contacts with the older people, and that they cleared the lower lands for agriculture, leaving the moorlands to a large extent to the older breeds. The transition between the fair people of the Montgomeryshire Severn from Caersws downwards and the darker, smaller people

[1] Greenwell, Rev. W., "Early Iron Age Burials in Yorkshire," *Archaeologia*, LX, part i [2nd Series, Vol. X], 1906, pp. 251–324; Parsons, F. G., "Saxon Bones, Folkestone," *J.R.A.I.*, LI, 1911; Peake & Hooton, "Saxon Graveyard at E. Shefford," *loc. cit.*, XLV, 1915.

[2] See references in Sayce, R. U., "Earthworks of N. Cards," *Trans. Cymmrodorion*, 1920–1.

[3] Fleure, H. J., "Ancient Wales, Anthropological Evidences," *Trans. Cymmrodorion*, 1917; also Sayce, *loc. cit.*

of the hill-country to the north is rather sharp.

Another probability is that historico-economic changes seriously affect the proportions of the types in our populations. Parsons argues that the darker types seem more abundant in the towns than in the country,[1] and it seems widely accepted that the little dark long-head better resists factory conditions, mining conditions, and town overcrowding than the big fair type. It would thence seem possible to argue that industrialism has increased greatly the importance of this element in our population.

The demonstrable emigration from the Welsh hills, both across the Welsh border and into the big towns, has doubtless also increased this element, while the rise of industrialism around the Pennines and Birmingham and among the valleys of the Glamorgan hills, all regions where old

[1] Parsons, F. G., "Colour Index of Brit. Isles," *J.R.A.I.*, L, 1920, p. 179.

types were important, has further contributed to this end. It also seems that the fair long-head has formed a rather large proportion of our emigrants to the new lands overseas.

The advent of large numbers of Central and East European immigrants to London appears to have brought a certain amount of broadening of the head in some areas, and these people of recent immigration remain unassimilated to a considerable extent in parts of London.

That physical type and mental characteristics are correlated in some way appears highly probable, but analyses are as yet not refined enough for any statement here. Indeed, the whole of the sketch given in the last few pages is but preliminary and requires checking by intensive work, which it is one of the main aims of this little monograph to promote.

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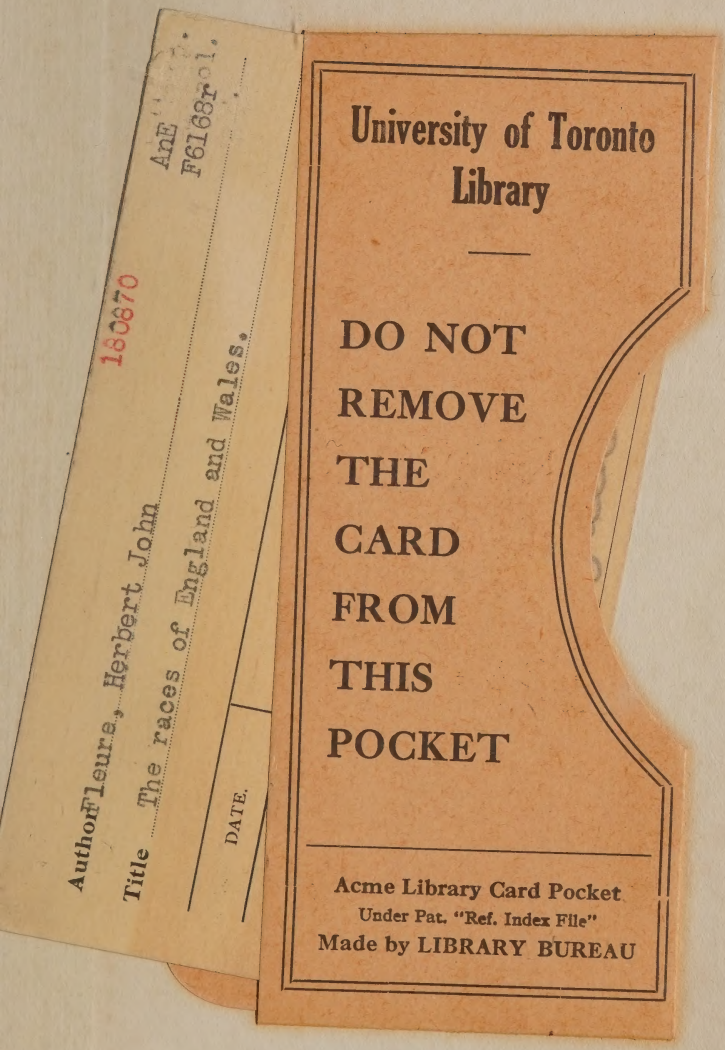

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